

CBCS SCHEME

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15PCD13/23

First/Second Semester B.E. Degree Examination, Dec.2023/Jan.2024 Programming in C and Data Structures

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is an algorithm? Write an algorithm to find the largest of three numbers. Also, give the flow chart for the same. (08 Marks)
- b. Give the structure of C program and explain its different sections briefly. (08 Marks)

OR

- 2 a. Briefly explain, printf() and scanf() statements used in C language. (06 Marks)
- b. List different operators used in C language. Briefly explain relational operators and logical operators. (06 Marks)
- c. Identify valid and invalid variables for the following :
 - (i) Break
 - (ii) _count
 - (iii) Sum%
 - (iv) 1product(04 Marks)

Module-2

- 3 a. List and explain different branching statements with their syntax. (08 Marks)
- b. Write a C program to check whether the given integer number is even or odd. (04 Marks)
- c. Give the differences between break and continue statements. (04 Marks)

OR

- 4 a. List and explain different looping statements used in C language. (08 Marks)
- b. Write a C program to check whether the given integer number is prime or not. (08 Marks)

Module-3

- 5 a. Define (i) Array (ii) String. (04 Marks)
- b. Write a C program to read N elements into an array and search the given key element using linear search technique. (06 Marks)
- c. Write a C program to concatenate two given string without using built-in function. (06 Marks)

OR

- 6 a. List and explain basic string handling functions with their syntax. (08 Marks)
- b. Explain parameter passing techniques with an example. (08 Marks)

Module-4

- 7 a. Define structure. Briefly explain different types of structures with their syntax. (08 Marks)
- b. Write a C program to read the information of 'N' employees containing name, emp_id and salary. Also, display the information of all employees on the screen. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Explain fscanf () and fprintf () statements with their syntax and example. (06 Marks)
 b. Given two university information files "studentname.txt" and "usn.txt" that contain students name and USN respectively. Write a C program to create a new file called "output.txt" and copy the contents of files "studentname.txt" and "usn.txt" into output file in the sequence shown below. Display the contents of output file "output.txt" on to the screen. (10 Marks)

Student Name	USN
Name 1	USN 1
Name 2	USN 2
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Module-5

- 9 a. Define : (i) pointer (ii) printer to a pointer. (04 Marks)
 b. Write a C program to copy one string into another string using pointers. (06 Marks)
 c. Briefly explain malloc () and realloc () with their syntax and example. (06 Marks)

OR

- 10 Briefly explain the following with their physical representation :
 a. Stack.
 b. Queue.
 c. Linked list.
 d. Tree.

(16 Marks)

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